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10/806,591	03/23/2004	Matthew R. Sivik	3258	2464

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THE LUBRIZOL CORPORATION
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EXAMINER

LANG, AMY T

ART UNIT PAPER NUMBER

1714

DATE MAILED: 10/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/806,591

Applicant(s)

SIVIK ET AL.

Examiner

Amy T. Lang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application
- ☐ Other: ____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - (i) page 2, line 30 of the specification includes the phrase "to have a grease that are capable," which is grammatically incorrect.
 - (ii) page 7, line 12 of the specification includes the phrase "examples of suitable a mono-nuclear," which should be corrected to "examples of a suitable mono-nuclear."
 - (iii) page 20, line 8 of the specification includes the phrase "heating the a solvated," which is grammatically incorrect.

Appropriate correction is required.

Claim Objections

2. Claim 5 is objected to because of the following informalities: the semicolon in the last line of the claim should be deleted. Appropriate correction is required.
3. Claim 6 is objected to because of the following informalities: the applicant is encouraged to replace "is" in line 2 of the claim with "selected from" so that the claim reads clearer. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claim 12 recites the limitation "the thickener" in line 5 of the claim. There is insufficient antecedent basis for this limitation in the claim since the term was not present in claim 1, from which claim 12 is dependent.

Use Claims

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 is a "use claim." According to the MPEP 2173.05(q) such claims raise an issue of indefiniteness under 112, second paragraph.

In particular, claim 15 provides for the use of imparting at least one improved property, but, since the claims do not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

8. Additionally, 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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9. Thus, claim 15 is also rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-4, 6, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Olson (US 5,308,514).

Olson discloses a grease composition comprising overbased calcium sulfonate containing solid particles of colloidally dispersed calcium carbonate in the form of calcite (column 1, lines 4-16). The grease composition also contains lubricating oil and a salt forming acid (column 4, lines 20-28; column 5, lines 23-26). Olson further discloses the acid as an orthophosphoric acid, which clearly overlaps the instantly claimed inorganic acid (column 4, lines 20-22). In another embodiment, the salt forming acid is an organic acid, specifically malonic acid or succinic acid (column 4, lines 20-26). Malonic acid

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clearly overlaps the instantly claimed formula (I) when R^1 and R^2 are hydrogen, Q^1 through Q^4 are oxygen, Z is one carbon atom, and T is hydrogen.

Therefore, Olson '514 anticipates the cited present claims.

8. Claim 10 is rejected under 35 U.S.C. 102(b) as being anticipated by Olson (US 5,308,514) in view of the evidence given by Muir (US 4,560,489).

Olson, as discussed in paragraph 7 and incorporated here by reference, discloses a grease composition comprised of an overbased organic acid, an acid producing compound, and lubricating oil. The composition further comprises 12-hydroxystearic acid as a soap forming fatty acid (column 4, lines 14-19; Example 1, column 8).

While Olson does not explicitly disclose a thickening agent, Muir provides evidence that 12-hydroxystearic acid is a known thickener to a grease composition (column 3, lines 9-17). Therefore Olson does in fact teach a thickening agent.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson (US 5,308,514).

Olson, as discussed in paragraph 7 and incorporated here by reference, discloses a grease composition comprised of an overbased organic acid, an acid producing compound, and lubricating oil. The process to prepare the composition, as disclosed by Olson, involves first mixing overbased calcium sulfonate, lubricating oil, and an acid producing compound (Example 1, column 8). Water, an aqueous solvent, was then added to the mixture followed by heating of the mixture to 280 degrees Fahrenheit (Example 1, column 8). The heating would intrinsically remove the water from the mixture by evaporation to produce a colloidal grease mixture. Olson further discloses adding additives to the grease mixture including viscosity index improvers (viscosity modifiers), oxidation inhibitors (rust inhibitors), and more (column 6, lines 8-19)

Olson does not disclose (i) the grease composition as specifically imparting improved water repellence, improved water wash-off, improved thickening, increased

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longevity, or decreased wear and (ii) the specific use of phosphoric acid, malonic acid, or succinic acid in Example 1 as the acid producing compound.

With respect to (i) above, since the composition disclosed by Olson is identical to the grease composition that is instantly claimed, the grease composition disclosed by Olson would intrinsically display the same properties that are instantly claimed.

With respect to (ii) above, although Olson uses boric acid in the specific example, phosphoric acid, malonic acid, and succinic acid are also other embodiments of the invention that are disclosed which would have been obvious to utilize.

12. Claims 7, 8, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson (US 5,308,514) in view of Ney (US 5,932,525).

Olson, as discussed in paragraph 7 and incorporated here by reference, discloses a lubricating composition comprised of an overbased organic acid, an acid producing compound, and lubricating oil. Olson also discloses the addition of additives to the composition including polymers, which serve as viscosity index improvers (column 6, lines 8-16).

Olson does not specifically disclose a copolymer derived from an olefin and an unsaturated dicarboxylic acid anhydride.

Ney also discloses a lubricating composition with a polymer based viscosity index improver (column 1, lines 4-8). The viscosity index improver comprises a copolymer with olefin and dicarboxylic acid anhydride, specifically maleic anhydride,

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monomer units (column 6, lines 37-42; column 7, lines 15-18; column 8, lines 31-67).

This specific viscosity index improver aids in viscosity and dispersancy modification.

Since the polymer disclosed by Ney not only functions as a viscosity index improver, but also aids in dispersant properties, and Olson discloses a polymer viscosity index improver, it would have been obvious for Olson to utilize the viscosity index improver disclosed by Ney. Therefore, the invention of Olson would comprise an acid producing compound of a copolymer.

13. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olson (5,308,514) in view of Muir (US 4,560,489) and Ney (US 5,392,525).

Olson, as discussed in paragraph 7 and incorporated here by reference, discloses a grease composition comprised of an overbased organic acid, an acid producing compound, and lubricating oil. The organic acid, calcium sulfonate, is present in the composition up to 28 wt% (column 2, lines 45-50). The acid producing compound is present from 0.6 to 3.5 wt% (column 5, lines 29-32). Although Olson discloses the specific wt% of boric acid, other embodiments of the acid producing compound include phosphoric acid, malonic acid, and succinic acid so that it would have been obvious to utilize these compounds from 0.6 to 3.5 wt%. The lubricating oil is present from 60 to 90 wt% (column 5, lines 23-26). The performance additive phenyl alpha naphthylamine, an oxidation inhibitor, is present in the composition at 8.3 grams, wherein the total composition weighing 1,660 grams (Example 1, column 8). Therefore, 0.5 wt% of the performance additive is present in the grease composition. The

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compound 12-hydroxystearic is present in the composition from 1 to 6 wt% (column 5, lines 33-42).

Muir, as discussed in paragraph 12 and incorporated here by reference, discloses that 12-hydroxystearic acid is a known grease thickener.

Ney, as discussed in paragraph 11 and incorporated here by reference, discloses a composition comprised of a polymer functionalized with dicarboxylic acid anhydride as a viscosity index improver. This compound is present in a lubricating composition from 0.005 to 25 wt% (column 12, lines 29-31), so that it would have been obvious for Olson to utilize the viscosity index improver within this range.

14. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olson (US 5,308,514) in view of Hayashi (US 4,670,173).

Olson, as discussed in paragraph 7 and incorporated here by reference, discloses a grease composition comprised of an overbased organic acid, an acid producing compound, and lubricating oil. The acid producing compound is further disclosed as succinic acid that is open to substitution.

Olson does not specifically disclose the succinic acid as being substituted with the instantly claimed hydrocarbyl groups.

Hayashi also discloses a grease composition comprised of hydrocarbyl substituted succinic acid (column 17, line 55 through column 18, line 3; column 22, lines 10-24; column 22, line 68 through column 23, line 5). The hydrocarbyl substituent contains from 3 to 100 carbon atoms, which clearly overlaps the instant claim 5. This

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compound helps to aid as a viscosity improver in the grease composition (column 3, lines 54-68). It therefore, would have been obvious for Olson to also utilize a hydrocarbyl substituted succinic acid since this substituent is known in the art and it aids in viscosity improvement.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy T. Lang whose telephone number is 571-272-9057. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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